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EOSDIS STATUS UPDATE TO SWAMP

April 4, 1997

Rick Obenschain

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AGENDA

- Project Management
  - ESSAAC Concerns and Action Plan
  - Personnel Refocusing
  - Integrated Schedules
- B.0', B.0 and B.1 Planning
- Emergency Back-ups
- EOS Core System (ECS) Status
- Mission Management
- DAAC Development and Science Operations

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EOSDIS Alternative Architecture Strategies

March 13, 1997

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Contents

- Current EOSDIS Requirements
- Baseline Science Data System
- Alternative Architecture Options - AM-1 Era
- Alternative Architecture Options - PM-1 Era
- Options vs. User Satisfaction
- Recommendation

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Current EOSDIS Requirements

- Support (24) 33 Measurement Set
  - Process, archive, and distribute data from a diverse set of environment measurements (~1000 parameters)
- Handle Large Data Volumes
  - Archive, access and distribute very large data holdings (~3 Tera bytes per day)
  - Requires careful and precise documentation of information about the data to facilitate efficient searches
- Reprocess Data Sets
  - Support reprocessing of data sets as investigators characterize instruments
  - Implies a large processing capability, ability to trace data versions and configuration management (CM)
- Maintain 15 Year Data Set
  - Archive and distribute long term data sets in support of global change research
  - Implies CM, archive maintenance, system evolvability, and robust data management system
- Support Inter-instrument Dependencies
  - Facilitate processing of data from an instrument using data sets from other

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Current EOSDIS Requirements

- Facilitate Inter-disciplinary Studies
  - Provide access and distribution of diverse types of data to a broad community of scientists who individually may require several of these data types
  - Implies need for common access processes and common formats
- Support Diverse User Communities
  - Provide access and distribution of diverse data types to a broad user community
  - Encourage third party value added supplier to service less scientific users
  - Requires careful and precise documentation of information about the data to facilitate efficient searches
- Provide Access to Existing and External Data Sets
  - Migrate existing (e.g, V0 Data) and external data (e.g. NMC) into EOSDIS
- Provide “Standard” Data Products
  - Process a subset of the data on a routine basis, shortly after acquisition
- Allow Timely Access of Data to the User Community

Baseline Science Data System

- **Location of Functions**
  - **SCF: algorithm development**
  - **DAACs (8): routine production, archive, distribution to PI and broader community (7), plus Socio-economic Data and Applications Center (1)**
  - **Future: (if WP-ESIP experiment successful)**
    - **ESIP-1s for routine production, archive, and distribution**
    - **ESIP-2s for experimental products and services**
    - **ESIP-3s for non-traditional users**
    - **Long Term Archives in place (NOAA, USGS MOUs - NOAA seeking funding)**
- **Implementation:**
  - **Single large contract with end-item deliverables using primarily waterfall methodology (ECS)**
  - **Core system developed by ECS contract, delivered to DAACs, tailored to unique data products per DAAC, extended and operated by DAACs**
  - **Key Release B Functions in support of AM-1, Landsat 7, SAGE III**
    - » **Release B.0 supports early mission instrument calibration, algorithm validation, and initial product generation**
      - **Rel. B.0' is an "incremental build" within Rel. B.0**
    - » **Rel. B.1 provides full production generation and search/access services**

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Baseline Science Data System - Capabilities by Release

DSWG Prioritized Requirement	B.0'	B.0	B.1
1. Spacecraft and instrument operations	FOS	FOS	FOS
2. Capture data - Full capability (including ASTER DARs)			
3. Ingest at the assigned DAACs all instrument Level 0 or equivalent data (ASTER L1A and L1B, Landsat 7 0R, and ancillary data) for which EOSDIS is the primary archive			
4. Backup all data identified in item 3 required to produce EOS standard data products	° 1		
5. Catalog data such that they can be located			
6. Support retrieval of data specified in #3			
6.1 by Instrument Teams (ITs)			
6.2 by all *approved* users			
6.3 Support ability to determine status of orders for data	° 2	° 2	

1 - COTs FSMS support only; 2 - order-level tracking only

• = fully supported; O = supported with reduced throughput capacity

ESDIS Baseline Science Data System - Capabilities by Release

DSWG Prioritized Requirement	B.0'	B.0	B.1
7. Support DAAC operations (run PGEs) for pre- and post-launch testing (including support for QA) for the case of instruments not using data from other instruments; includes on-demand processing for ASTER			
8. Support retrieval by ITs of test data generated in item 7			
9. Support DAAC operations for pre- and post-launch testing using data from other instruments			
9.1 Local DAAC data from other instruments			
9.2 Unsubsetted data from other DAACs	° 3		
10. Support retrieval by Instrument Team (IT) users of test data identified in item 9			
10.1 Electronically			
10.2 Via media	° 4		
11. Support partial production planning and processing using data from a local DAAC, or a given instrument's antecedent (lower level) products from another DAAC	° 5	° 7	
12. Support unsubsetted data retrieval by all users from any DAAC (with one-stop shopping capabilities of Release A)	° 6		

3 - at least subscription-based FTP pull; 4 - manual media distribution;
5 - limited set of production rules; 6 - FTP-based browse; 7- remote acquire only

• = fully supported; O = supported with reduced throughput capacity

ESDIS Baseline Science Data System - Capabilities by Release

DSWG Prioritized Requirement	B.0'	B.0	B.1
13. Support partial production processing using unsubsetted data from another DAAC			
13.1 Electronically	°[3]	°[7]	|
13.2 Via media	°[4]	|	|
14. Support subsetted data retrieval by all users	x	°[7]	|
15. Support production planning and processing - full			
15.1 Run PGEs in production mode using data from local DAAC	°[9]	°[9]	|
15.2 Run PGEs in production mode using data from another DAAC	°[9]	°[9]	|
16. Enhance data retrieval tools			
16.1 Coincident search (using metadata only)	x	x	|
16.2 Advertising Service (for data discovery)	x	|	|
17. Support reuse of ECS components by other providers	x	x	|

8 - Landsat only; 9 - Limited throughput capacity

- = fully supported; O = supported with reduced throughput capacity; x - not supported

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Alternative Architecture Options Roadmap - AM-1 Era

Baseline

B.0'
B.0
B.1

AM-1 Option 1 - ECS Variant

B.0'
B.0 frozen

Validate Programmatic and B.1 requirements via HQ-appointed science user committee

AM-1 Option 2 - PI Mode

Validate Programmatic and B.1 requirements via HQ-appointed science user committee

Task Order Contract

PI Only

B.0'
B.0 frozen

B.1 per PI management

Hybrid

B.0' B.0 B.1	Contingency System	New System	TRMM Growth	Enhanced System
(MODIS MISR ASTER)	(ETM+)	(MOPITT)	(CERES)	(SAGE III)

PI-determined teams (examples above)

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Alternative Architecture Options - AM-1 Era

- **Premise: Release B.0 required for launch support in AM-1 era**
  - **Provides essential Level 0 ingest, archive, Level 1 processing and data distribution**
  - **Schedule driven**
- **Option 1:**
  - **Primarily services science community**
  - **Provide Release B.0 functionality for "at-launch" capability**
  - **Validation of programmatics (e.g. number of DAACs) and Release B.1 requirements performed by HQ appointed science user committee**
    - » **Committee should include reps from Payload Panel, Data Panel, ESSAAC, NRC/BSD, NRC/CGED, DAAC UWG**
  - **Implement Release B.1 based on committee recommendations**

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Alternative Architecture Option - AM-1 Era

- **Option 2:**
  - **Provides variations on PI directed implementation; reallocates resources**
  - **Validation of programmatics (e.g. number of DAACs) and Release B.1 requirements performed by HQ appointed science user committee**
    - » **Committee should include reps from Payload Panel, Data Panel, ESSAAC, NRC/BSD, NRC/CGED, DAAC UWGs**
  - **Sub-option 2.1 (Task order)**
    - » **Provide ECS resources via task order for Release B.1 under PI management**
  - **Sub-option 2.2 (Hybrid)**
    - » **Provides B.1 specific functionality for MODIS, MISR, and ASTER**
    - » **Relies on contingency system for Landsat 7**
    - » **Provides new or enhanced systems for MOPITT and SAGE III**
    - » **Expands TRMM system for AM-1 CERES**
    - » **Funding to be reallocated**
  - **Sub-option 2.3 (PI-only)**
    - » **Relies on PI-defined implementation and resource acquisition**

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Alternative Architecture Options Roadmap - PM-1 Era

Premise:
- **Focus on potential cost reduction**
- **Potential requirements impact acceptable**

Change Number and Roles of Sites

PM-1 Option 1

Centralize current functions to one or two DAACs

PM-1 Option 2

Compete federation for PM-1 earlier
- **ESIPs type 1s**
- **ESIPs type 2s**

PM-1 Option 3

Centralize Level 1 production, archive, and distribution (limited to science community)

- Option 3.1 - Moves funds for higher level production generation, archive and distribution to R&A and ESIPs type 3 budgets

- Option 3.2 - Compete higher level product generation for research community at ESIPs type 2s; broad user community handled by ESIPs type 3s

PM-1 Option 4

Change fundamental architecture (ie.e no DAACs)
- **PI provide short-term production sites for the life of mission, including 3 year rolling archive and distribution service**
- **Low level of service for long term archives**
- **"Data mining" via ESIP type 2s**

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Alternative Architecture Options - PM-1 Era

- Option 1:
  - Centralize current functionality at one or two ECS based DAAC sites
- Option 2:
  - Implement the federation early for PM
    - » Compete Type 1 ESIPs, Type 2 ESIPs immediately
- Option 3:
  - Level 1 centralization, modify approach to Level 2 and higher products
    - » Structured implementation limited to Level 1 processing
    - » Only Level 1 archived
      - Sub-option 3.1:
        - L2 and higher products no longer EOSDIS function
        - Funds for L2 and higher products move to R&A and ESIP-3 budgets
      - Sub-option 3.2:
        - Compete L2 and higher products in ESIP-2s
        - P.I.s select winners

Note: Options from Future of EOSDIS Study Team

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Alternative Architecture Options - PM-1 Era

- **Option 4:**
  - **Change fundamental architecture / site roles (no DAACs)**
    - » **PI-based production (life of mission), archive & distribution to research community (3 year rolling archive) - “short-term” life**
    - » **Long Term Archives - Very low service levels (may archive L1 and algorithms)**
    - » **ESIP-2, -3’s funded to become LTA “data miners” producing long-term data sets from LTA, or producing most recent scientific innovative products. (3 - 5 year life - continuous, but staggered competition)**

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Recommendation

- Headquarters should appoint a science user committee to validate programmatics (e.g. number of DAACs) and Release B.1 requirements
  - Committee should include reps from Payload Panel, Data Panel, ESSAAC, NRC/BSD, NRC/CGED, DAAC UWGs
  - Committee Charter:
    - » Review key programmatic and technical Release B.1 requirements with respect to MTPE vision (see sample Validation matrix)
    - » Identify potential areas of data system growth outside of MTPE vision
    - » Solicit feedback from members of user community on areas of potential downsizing of data system capabilities (see sample User Satisfaction matrix)
    - » Coordinate with ESDIS project on developing and pricing alternative data system architectures
    - » Submit findings and recommendations to Code Y
- Action Dates
  - Headquarters committee formation 3/21/97
  - Committee recommendation 5/16/97
  - Evaluation and accommodation by ESDIS 6/30/97

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Recommendation
Sample Programmatic / Release B.1 Requirements Validation Matrix

Decisions	Decision Type	Support Info.
Programmatic 1) How many DAACs? 2) Products vs. services - routine production? - usable by broad community? - who produce (DAAC, SCF, end-user?) - 15 year product? - inter-instrument required? 3) Appropriate support for interdisciplinary science? 4) Appropriate services per class of diverse user community?	1) Cost critical factor, science desire for discipline expertise, political strong influence 2) Standard product lists now science driven (but, no specific breakdown like this exists per standard product) 3) Programmatic decision (previous HQ vision of EOSDIS is as 'fostering' interdisciplinary science) 4) Cost at operations level driver, technical derived service levels in system, political strong influence (EOSDIS/EOS not just for NASA researchers)	1) - 4) Option 1, ECS Variant: Cost savings to be developed by Project, with collaboration of independent team review in all options 1)-4): Option 2.1, Task Order: Same as Option 1 but with PI review 1) - 4) Options 2.2, 2.3, Hybrid or PI only: PI developed costs, Project may assemble and compare to Baseline cost estimates for reference
B.1 Requirements 1) Enhance 'push' functions - on-demand processing - cross-DAAC planning - inter-DAAC product dependencies - etc. 2) Enhance Data Center Operations - media quality control - request/order tracking - etc. 3) User Search & acquire functions - subsetting - user subscriptions - ASTER DAR status - coincident search	1) - 3) Cost vs. need vs. potential 'work-around' acceptability applies to all	1)-3) Option 1, ECS Variant: Cost to be developed by Project based on clusters of functions 1)-3) Options 2.1, Task Order: Costs to be developed by ECS, accepted by PI Options 2.2, 2.3, Hybrid, or PI only: Costs developed by P.I.s if replacing current B.0/B.1 in Hybrid or PI only sub-options

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Recommendation - Sample User Satisfaction Matrix

	ESSAAC	NRC/ BSD	NRC/ CGED	Instrument Teams	Data Panel (exclude I.T. members)	Current user base
AM - Option 1: ECS Varient AM - Option 2.1: PI Mode, Task order sub-option						
AM - Option 2.2: PI Mode, Hybrid sub-option						
AM - Option 2.3: PI Mode, PI-only sub-option PM - Option 1: Centralize current functions to one or two DAACs						
PM - Option 2: Compete federation early						
PM - Option 3.1: Level 1 centralization, higher level product funds to R&A, ESIP-3						
PM - Option 3.2: Level 1 centralization, higher level products at ESIPs						
PM - Option 4: Change fundamental architecture (no DAACs)						

R: Red = Dislike

Y: Yellow = Concern/Tolerable

G: Green = Preferred

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Implementation Strategy - System Readiness

Baseline Plan

CSR | RRR | Debrief | FOR/FRR

Developer Testing

- Developer Unit Test
- Developer I&T
- Developer Acceptance Testing
- Engineering Tests

EGS I&T

- Component Tests
- Interface Tests
- EGS Certification Tests

Confidence Test Program

- Science Software I&T
- DAAC Tests
- Ops Readiness Activities
- Joint Flight/Ground Testing
  - TRMM
  - Landsat 7
  - AM-1
  - ASTER GDS
  - FOOs

Ops Testing

- Operations Readiness Tests
- Operations & Maintenance

Streamline Plan

RRR (Redefined) | FOR/FRR

Developer Testing

- Developer Unit Test
- Developer Verification Test
- System Release
- Iteration Builds
- Developer Integration
- Development Builds
- Engineering Tests/Demos

EGS System Readiness

- EGS Acceptance & Integration Testing
- Integrated Ground System
- EGS Certification & Ops Readiness Testing
- Science Software I&T
- DAAC Tests
- Ops Readiness Activities
- Joint Flight/Ground Testing
  - Landsat 7
  - AM-1
  - ASTER GDS
  - SAGE III

Mission Ops

- Operations & Maintenance

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Release B

- Terminology
- Releases
  - operational capabilities which are deliverable to the Project and to the user community
- Builds
  - integrated and tested parts of a release
  - development team transfers a set of iterations to test environment allowing test team to formally evaluate functionality outside of development environment
- Iterations
  - integrated sets of components from several subsystems to support one or more functional threads

Release B

Terminology

- Release B.0
  - Required functionality for the period Launch through Launch +6 months
  - Covers the first 12 of 17 functional capabilities reviewed by Data Systems Working Group (DSWG)
  - B.0 Release readiness date by Hughes to the Project 12/31/97
  - Three builds: Infrastructure (10 iterations), External Interface (6 iterations) and Release Critical (10 iterations)
  - Integrated Test Concept

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Release B

- Release B.1
  - Remaining functionalities of DSWG list; provides all of the originally planned capabilities of Release B
  - Release Fulfillment I Build (12 iterations)
  - Release Fulfillment II Build (11 iterations)
- Status
  - First builds of Release B.0 complete and transferred to test environment
  - Schedule contingency remains at 5 weeks out of 8

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Release B

- Release Critical Build of B.0 (with components from main subsystem)
  - RC1 (upgrade): Planning, Data Processing, Data Management
  - RC2 (New Data Types): Data Processing, Data Server, Systems Management
  - RC3 (Discovery): Client
  - RC4 (Search): Client, Data Server
  - RC5 (Browse): Client, Data Management
  - RC6 (Acquire): Ingest, Client, Data Management
  - RC7 (Interoperability): Ingest, Data Management
  - RC8 (Enterprise Management): Client, Systems Management
  - RC9 (Data Production): Planning, Data Processing, Data Server
  - RC-10 (System Operability): Data Server, Ingest

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Release B

- Build B.0'
  - A build, not a release, to be completed on way to Release B.0
  - Contains the most launch-critical capabilities with B.0
  - Ensure early demonstration of capabilities to meet critical requirements
  - Not a deliverable
  - Consists of RC1 and RC2 and a restructuring of RC9 to include launch-critical parts of RC3 through RC-10

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Release B

- Demonstration in May 1997 of RC1 and RC2 “Push” capability
  - Ensure that ECS development is on track
  - Identify potential areas of concern
  - Supports full Level 0 data ingest, production planning, product generation, product cataloging and archive, IT product access and Quality Assurance
  - Utilize real Product Generation Executives (PGE’s) and test data
- Demonstration in August 1997 of B.0’, Push and Pull including capabilities to support Landsat-7
  - Demonstrate remaining functionality with emphasis on “Pull”

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Emergency Back-ups

Emergency Back-up Plans were initiated on March 17, 1997 with each instrument team on AM-1 (also Landsat and SAGE-III)

- **Significantly scaled back from back-up plans proposed in February 1997**
- **These will be implemented regardless of the success of B.0' and B.0 - as an "insurance policy" (per SWAMP/Data Panel recommendation).**

Funds' allocations were provided to ITs on March 18; awaiting proposals (revisions from February proposals) from ITs

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EOS CORE SYSTEM (ECS)

STATUS

March 31, 1997

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ECS Status 3/31/97

Pre-Release B Testbed:

- Good progress being made on formal testing at Goddard DAAC
- NSIDC DAAC equipment installed and configured in Goddard DAAC for use by Science Office and M&O staff to refine procedures prior to deployment to sites

Release B.0 Status:

- Infrastructure Build : Complete

- External Interfaces Build: Complete

ECS Status 3/31/97

Release B.0 Status (cont.):

- Release Critical Build: scheduled for "early" completion 5/16/97
  "late" completion 6/23/97

  Current Status:
  - Still projecting completion of all iterations by 6/9/93. Some reorganization of functionality/iterations is underway as a result of reprioritization in support of B.0'.
  - B.0': Critical capabilities (subset of B.0 ingest, archive, planning, processing, and distribution functions) defined, and grouped into 3 Iterations (RC1, RC2, and RC9) for prioritized development and integration. Current Status:
    - Good progress on RC1 and RC2. Expect demo of RC1 capabilities to ESDIS this week.
    - Good progress on definition and preparation for May demo of AM-1 critical capabilities to ESDIS, ITs and DAACs. Major concern is availabiity of Version 1 PGEs and test input data from ITs. (To date, only ASTER has delivered PGEs. MOPITT and MISR are candidates for the demo, with PGE's promised for early-mid April.)

ECS Status 3/31/97

Release B.0 Status (cont.)

- System Verification:
  - Dry Runs for Infrastructure formal tests were initiated late last week. They had been delayed 3 weeks due to CM/ software turnover process issues - **This has been identified as a major area of concern.** ECS has initiated the following corrective actions, which are being closely monitored by ESDIS:
    - Consolidating CM staff into one cohesive team
    - Recruiting senior CM Manager with extensive experience
    - Established written procedures for use by development personnel
    - Establishing separate “build platforms” on which all future software builds will take place (will ensure better discipline and more reliable results)

- Summary status: estimate that 5 of 8 weeks schedule reserve remains.

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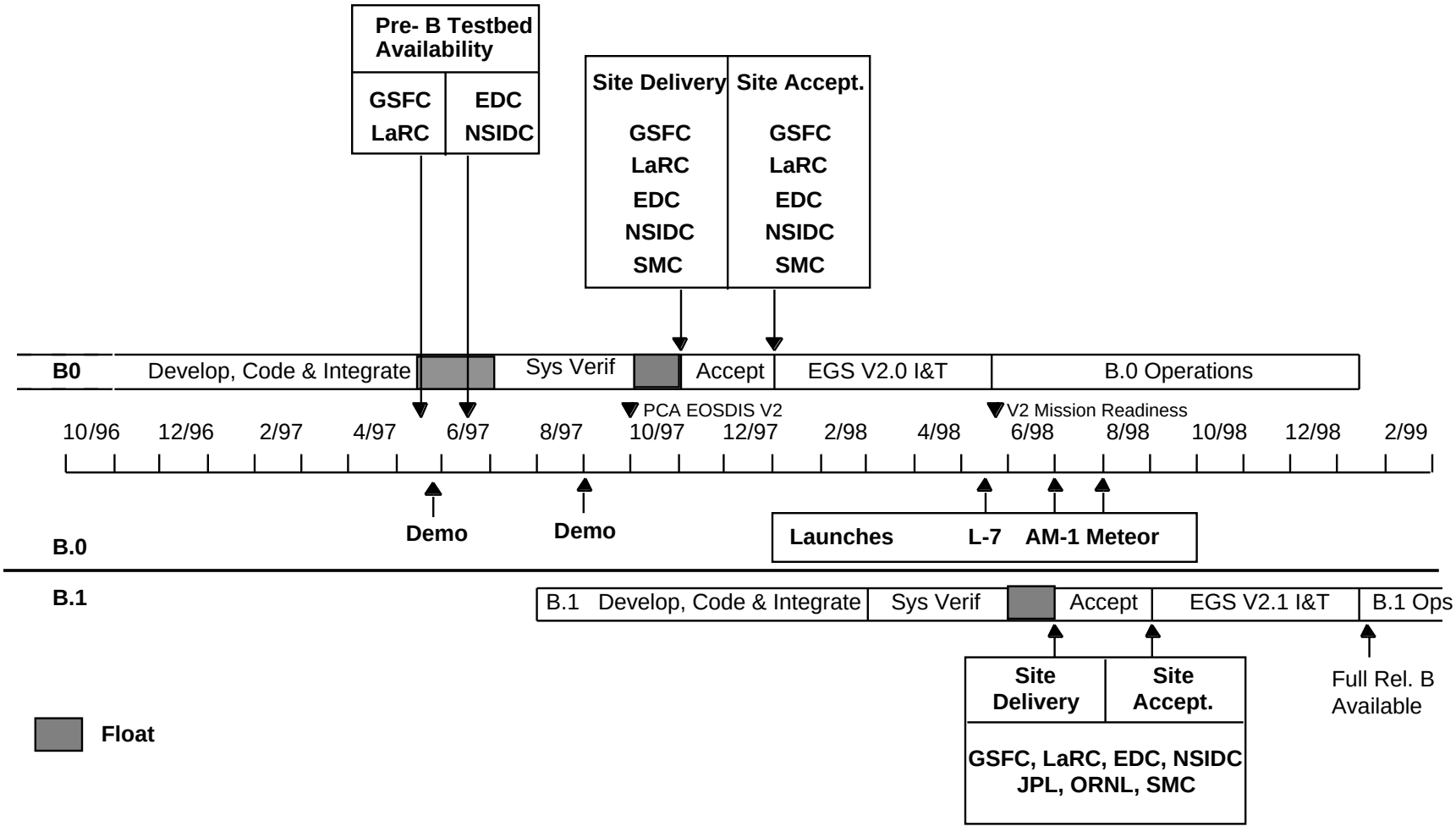
RELEASE B KEY MILESTONES



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ECS Status 3/31/97

Summary of Data Server Review Findings/Recommendations:

- COTS, infrastructure and environment problems are heavily impacting progress.
  - Recommendation: Establish Tiger Team to identify root causes of instability and inefficiencies; add resources to provide additional support to development staff; develop programmer guides for using key infrastructure components
  - Status: Tiger team addressing 18 issues. Actions include:
    - Establishing separate CM build platforms to improve build performance and reliability
    - Brought in consultants from Atria (ClearCase vendor) to improve CM efficiency - have corrected some scripts, and identified bottlenecks to be investigated
    - Established Preventive Maintenance program
    - Organizing Developers' Handbook

Other items have been closed, and will no longer be reported.

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Mission Systems Status

- Flight/Instrument Operations
  - Working instrument operations issues and Operational Interface Control Document (OICDs) through monthly Flight Operations Working Group forum
  - Instrument Operations Workshop scheduled for May
- Flight Operations Segment (FOS)
  - Release A supported EOS compatibility test (ECT-1)
  - Instrument Support Toolkit (IST) version of Release A currently installed for MODIS, CERES; MISR, Valley Forge are next
  - Engineering version of Release B will be used to support EOS compatibility test (ECT-2)
- EDOS
  - Version 2 supported EOS compatibility test (ECT-1)
  - Version 3 installed at White Sands Complex and GSFC; being integrated to support May EOSDIS Core System (ECS) demo and EOS compatibility test (ECT-2)
- Networks
  - EBnet circuit installations at DAACs scheduled to begin in May
- Ground Stations
  - Ops Concept Review scheduled for mid-April
  - Hardware for Norwegian ground station in transit to Norway
  - Alaska site selection imminent

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Mission Systems Status

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DAACs and Science Operations

SWAMP

April 4, 1997

Current DAAC Activities

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- **Operational Data Management and User Services (data ingest, product generation, archive, catalog, distribution, user support):**
  - **Over 20,000 distinct users in CY1996**
  - **Just over 2,000,000 products, 44TB of data delivered**
  - **676 Version 0 data sets and a variety of tailored products available to users**
  - **Tailored products, designed to meet user needs and facilitate network access, include pre-packaged subsets, reformatted data sets, new derived products**
    - » **GSFC DAAC: Interdisciplinary Data Collection - 60 geophysical parameters mapped to a common base**
    - » **JPL DAAC : on-line subsetting of Sea Surface Temperature data**
    - » **NSIDC DAAC: Sea Ice Motion computed from a combination of satellite and buoy data**

Current DAAC Activities

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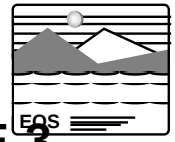

- EDC, GSFC, LaRC, NSIDC DAACs working with AM-1, SAGE-3 Instrument Teams, early SSI&T activities, preparing for Pre-Release B Test Bed, and for ECS B.0 and B.1 to follow.
- GSFC and LaRC DAACs Implementing TRMM Systems - more information to follow.
- JPL DAAC supporting NSCAT mission, preparing for SeaWinds and Jason (both in 1999).
- ORNL producing new Net Primary Productivity global data base product, and is supporting BOREAS and Amazon Basin field campaigns
- MSFC DAAC Closed March 31, 1997
  - "DAAC" functions for AM-1 LIS and related data to be UAH/ GHRC, which is:
  - Global Hydrology Resource Center, data management and user services arm of the Global Hydrology and Climate Center, University of Alabama Huntsville
  - Other former MSFC DAAC data sets now available from other DAACs or NOAA/NESDIS

EOSDIS TRMM / CERES Data Systems

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- GSFC and LaRC DAACs Given TRMM / CERES Responsibility:
  - Focused ECS Effort on AM-1, SAGE, Landsat-7
  - Elevated TRMM / CERES Backup effort begun in November, 1996, to be primary system for supporting TRMM mission
  - GSFC and LaRC DAAC Systems sized and planned for three year TRMM mission plus one year of post mission reprocessing and data migration to ECS - assuming November 1, 1997 TRMM launch
- Implementation Approach - Elements Common to Both DAACs:
  - Build on proven Version 0 capabilities, existing operational system and experienced, dedicated staff
  - Work closely with immediate clients - TRMM/TSDIS for GSFC DAAC and CERES Team for LaRC DAAC - ensure their critical needs are met, support TRMM mission tests
  - Rely on Version 0 catalog and distribution capabilities to support general community, provide interoperability via Version 0 IMS
  - ESDIS Project maintains oversight, but these efforts are being managed and carried out by the GSFC and LaRC DAACs.
  - Both DAACs know what they need to do, and are doing it.

GSFC DAAC TRMM Support System (TSS)

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- Support TRMM Science Team at launch, community access at Launch + 6 months (when TRMM Project releases reprocessed science products from TRMM instruments)
- Requirements coordinated with TRMM Project science team and TSDIS
- System is essentially a separate clone of Version 0 archive, catalog, and distribution system, scaled to meet TRMM requirements
- Modified Version 0 software running on SGI Origin 2000 platform, Storage Tech near-line archive
- Active interface with TSDIS for TRMM instrument data and products
- Key Milestones:
  - Successful design review held Jan 23, 1997
  - Initial system release July 5, update release to implement bug fixes, etc., Sept 15
  - Launch Readiness Review Sept 25, 1997
  - Post-Launch Release to support community access to TRMM data - May 1, 1998

GSFC DAAC TRMM Support System (TSS) Current Status

- New hardware, COTS software in procurement -
  - SGI Origin (IRIX 6.4), STK storage subsystem configuration due in early May, Oracle for Origin just received
  - DAAC working now with SGI Challenge (IRIX 6.2), loaner STK system (courtesy of ECS)
- Integration of pre-launch release software began on schedule, March 25
- Interface testing with TRMM / TSDIS in progress
- DAAC will support SIM-2 test in late April, port to new hardware configuration in May
- Risks - delay in completion of acceptance testing due to delay in delivery of SGI and STK hardware/software, and then possible difficulty in porting to new system.

LaRC DAAC - LaRC TRMM Information System (LaTIS)

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- Support CERES Science Team at launch, community access at Launch + about 4 months (when CERES team releases reprocessed CERES science products)
- Requirements coordinated with CERES Instrument Team
- LaTIS is a new CERES product generation capability and expanded archive, interfaced to DAAC's Version 0 catalog and distribution system
- SCF Toolkit, CERES science software, COTS production planning/scheduling tool, running on SGI Origin 2000 platform, Storage Tech near-line archive
- Active interface with GSFC/SDPF for TRMM instrument data
- Key Milestones:
  - Successful design review held Jan 31, 1997
  - First release April 1, ingest and archive, limited product generation; Second release Sept 1, cataloging and expanded product generation
  - Launch Readiness Review Sept 23, 1997
  - Post-Launch Release to support community access to TRMM data - May 1, 1998

C DAAC - LaRC TRMM Information System (LaTIS) - Current Sta

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- **Problems with COTS and Vendors nag the effort...**
  - **SGI Origin Workstations installed, but a month late, new "Data Vault" not yet received, but using 100GB disk - SGI provided a loaner Challenge as interim platform**
  - **AMASS port to Origin, IRIX 6.4 promised for April**
  - **Informix resisting the opportunity to demonstrate the excellence of their new IUS product in a NASA environment - silly prices, silly terms.**
  - **ECS is cooperating with DPREP software and COTS licenses**
- **DAAC has implemented a Challenge-based system to support early development and testing**
  - **Runs 8 R10000 CPUs, AMASS, Informix, Compilers**
  - **Runs CONSIM program for SDPF interface, SCF Toolkit, CERES PGE**
  - **All work on the interim platform is on schedule, Release 1 ready to support SIM-2 test in late April**
- **Risk - Delays in Resolving the COTS problems, especially AMASS on Origin, moving to the final COTS configuration**